Environmental Assessment Checklist

Project Name: Union Creek Projects EA
Proposed Implementation Date: 2019-2023
Proponent: Missoula Unit, Southwest Land Office, Montana DNRC
County: Missoula

Type and Purpose of Action

Description of Proposed Action:

The Missoula Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Union Creek Projects EA. These projects are located SE of Potomac, MT. (refer to vicinity & project maps in Attachment A) and include the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools			
Public Buildings			
MSU 2nd Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land	**Sec 2 & 3 T12N R15W**	**1061**	**253**

Objectives of the projects include:
-Pre-Commercial Thinning

- Increase growth and vigor of the stand(s)
- Achieve a more uniform stem distribution
- Concentrate growth on fewer trees in order to attain merchantable size in a shorter time frame.
- Increased vigor to reduce the threat of insect and disease infestation.

-Commercial Timber Harvest

- Remove overstory trees that contains high amounts of defect.
- Reduce competition for limited water and nutrients.
- Generate revenue for the Acquired Lands-Public Schools Trust.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	
Clearcut	
Seed Tree	
Shelterwood	
Selection	
Commercial Thinning	
Salvage	
Sanitation	59
Total Treatment Acres	59
Proposed Forest Improvement Treatment	
Pre-commercial Thinning	194
Planting	
Proposed Road Activities	
New permanent road construction	
New temporary road construction	
Road maintenance	
Road reconstruction	
Road abandoned	
Road reclaimed	
Other Activities	

Duration of Activities:	4 years- Not continuous activity
Implementation Period:	2019-2023

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- The Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) (DNRC 2010)
- all other applicable state and federal laws.

Project Development

SCOPING:

DNRC specialists were consulted, including: Andrea Stanley-Hydrologist, Soil Scientist, & Garrett Schairer-Wildlife Biologist, & Patrick Rennie-Archeologist

Issues and concerns were incorporated into project planning and design and would be implemented in associated contracts.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED: *(Conservation Easements, Army Corps of Engineers, road use permits, etc.)*

- **Montana Department of Environmental Quality (DEQ)-** DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.

- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

- **United States Fish & Wildlife Service**- DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at www.dnrc.mt.gov/HCP.

ALTERNATIVES CONSIDERED:

No-Action: The proposed pre-commercial thinning and commercial timber harvest would not occur. The stands would remain at overstocked levels with low production rates.

Action Alternative (Provide a brief description of all proposed activities):

Unibrow PCT:
(194 acres) DNRC would thin to an approximate 14' spacing. Preferred leave trees would be western larch (WL), ponderosa pine (PP),Douglas fir (DF), and lodgepole pine (LPP). Residual stand densities after thinning would be 200-225 trees per acre (TPA). Approximately 1000-1500 (depending on current stocking) TPA would be removed. The stand is currently

overstocked and the post thin spacing would support more optimum conifer growth and health. The unit would be hand thinned and would include all road cut slopes within the units. Slash would be lopped and scattered with a maximum lop height of 18 inches. No slash would be left in SMZs.

Union Suit Timber Permit:
(59 acres) DNRC would harvest overstory trees that contain one or more of the following: have been infested by insects, infected by disease, forked tops, crook, sweep or bole damage. Timber would be harvested using ground-based methods. Trees would be whole tree skid and slash would be concentrated in landing piles. Unmerchantable portions of the butt ends of felled trees (longbutting) would be left in harvest units to retain large woody debris onsite.

Impacts on the Physical Environment

Evaluation of the impacts of the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

VEGETATION:

Vegetation Existing Conditions:

Unibrow PCT:
Units 1 (22 acres), 3 (5 acres) and 4 (33 acres) are dominated by Douglas-fir. According to the stand level inventory, there are approximately 800-1000 trees per acre, existing in large clumps (up to 1 or 2 acres in size) with scattered openings. Openings either exist naturally or were created by past harvests. The clumps are heavily stocked with Douglas-fir, lodgepole, western larch, ponderosa pine and an occasional subalpine fir. Trees range in size from <1”-5” dbh with heights of 5-15 feet tall.

Unit 2 (105 acres) is dominated by ponderosa pine although Douglas-fir, western larch and lodgepole pine are also well represented. Approximately 1000-1500 trees per acre currently exist in unit 2. Species composition and stocking are consistent throughout the unit with most trees being 2-5” dbh. Ponderosa pine 6-8” dbh are also well represented throughout the unit, growing among the smaller diameter class. Average heights in the unit are 12-18’ tall.

Unit 5 (29 acres) is densely stocked (1500-2000 trees per acre) with western larch, subalpine fir, lodgepole pine and Douglas-fir. Western larch and subalpine fir are the dominant species on all north facing slopes, with the other species present on subtle ridges and aspect changes. Trees are currently experiencing very little growth. Average DBH for this unit is 2”-3” dbh with heights of 10-15 feet tall.

Union Suit Timber Permit:
(59 acres) The current stand conditions are a result of past harvests conducted by the previous owners. Stumps from several different entries can be observed with the last entry being made right before the DNRC was granted ownership of the land. The majority of the remaining overstory contains some form of defect, insect or disease. These trees are currently competing with a population of healthy advanced regeneration (6” dbh and smaller) for sunlight, water and nutrients. Stocking levels and species composition in the overstory vary by aspect. However, regardless of stocking or species the overall overstory condition is constant (high defect or

impacted by insects and/or disease). Douglas-fir, ponderosa pine, lodgepole pine and western larch exist in the stand. Douglas-fir is the dominant species across all size classes.

There is no Old Growth in the project area.

Knapweed is common in the area, especially along roads. Houndstongue can also be found along portions of the roads in the project area.

No rare plants were identified during field reconnaissance or within the Montana Natural Heritage Program dataset.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Noxious Weeds		**X**				**X**				**X**				
Rare Plants	**X**				**X**				**X**					
Vegetative community		**X**				**X**				**X**				**2**
Old Growth	**X**				**X**				**X**					
Action														
Noxious Weeds		**X**				**X**				**X**			**y**	**1**
Rare Plants	**x**				**x**				**X**					
Vegetative community	**x**				**x**				**X**					
Old Growth	**x**				**x**				**X**					

Comments:

1. Existing weeds, mainly knapweed and houndstongue are common in the Potomac Valley, especially along roads and within disturbed areas. Increased activity in the project areas, as well as a more open canopy, can lead to an increased risk of noxious weeds.

2. Competition among conifers would be reduced, allowing the remaining stands to capture more water, sunlight and nutrients, thereby having a positive direct, secondary and cumulative impact.

Vegetation Mitigations:

- DNRC systematically completes roadside spraying in the Potomac Valley, yet noxious weeds continue to occur, spread by disturbance, equipment operations, animals and wind. Project areas would be monitored for noxious weeds after implementation and herbicide may be applied when and if needed.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

The Hydrologist/Soil Scientist reviewed NRCS soil data (for Missoula County), recent and historic aerial imagery, topographic data, and soil observations completed in a nearby area (13N 15W Sec 36). The table below summarizes soil conditions in the project area.

	Mapping Unit Name	Soil Description	Erosion Potential	Displacement hazard	Compaction Hazard	Notes
133	Winkler-Kadygulch family, complex, 30 to 60 percent slopes	Shallow-mod deep residuum & colluvium low clay content	Low, very coarse K .02	Mod to high on slopes >45%	Mod	Shallow-Mod depth soils with fractured rock at shallow depth, northerly aspect cool and more productive than soils located on adjacent south-facing slope (south of commercial unit).
37	Evaro gravelly loam, 30 to 60 percent slopes	Gr Silt Loam Colluvium from argillites / quartzite Volcanic ash Surface Low clay content	Moderate K .17	Mod to high on slopes >45%	Mod	Avoid excessive disturbance of ash surface.

Erosion Factor **K** indicates the susceptibility of a soil to sheet and rill erosion and considers rock fragments. K of .02 is low and .69 is highest

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Physical Disturbance (Compaction and Displacement)		**X**			**X**					**X**			**y**	**1**
Erosion	**X**				**X**				**X**					
Nutrient Cycling	**X**				**X**				**X**					
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**				**x**				**X**					
Action														
Physical Disturbance (Compaction and Displacement)		**X**				**X**				**X**				
Erosion		**X**			**X**				**X**				**y**	**2**
Nutrient Cycling		**X**			**X**				**X**				**y**	**2**
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**				**X**				**X**					

Comments:

1. Soil disturbance from harvest activities may result in increased risk of erosion issues.

2. Where slash is piled, nutrients would be concentrated at the piles. Where the unit would be lop-and-scattered, not all the nutrients in the slash would be available immediately.

Soil Mitigations:

- Best Management Practices (BMPs) would be implemented on all roads and within the units. Unit boundaries exclude the Streamside Management Zones (SMZs). Slash from the lop-and-scatter thinning process would be left in the units to mitigate erosion risks.

- Residual slash from cut trees would be lopped and scattered to a maximum depth of 18 inches and left within the unit. Nutrients would become available to soils as they decompose.

- Ground-based logging equipment (tractors, skidders, and mechanical harvesters) would be limited to slopes less than 45% unless not causing excessive disturbance.

- The Contractor and Sale Administrator should agree to a general skidding plan prior to equipment operations. Skid trails would be mitigated following harvesting and yarding operations with water bars or slash.

- To prevent soil compaction, ground-based mechanical felling and yarding would be restricted to one or more of the following conditions:
    - Soil moisture content at 4-inch depth less than 20% oven-dry weight.
    - Minimum frost depth of 4 inches.
    - Minimum snow depth of 18 inches of loose snow or 12 inches packed snow.

- A minimum of 4 tons/acre and up to 9 tons/acre, of coarse and fine woody debris would be retained on site to meet the concentration for the DF/PHMA habitat type recommended by Graham et al (1994).

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions:

- The project is within the Upper Union Creek watershed (HUC 12 Code ID: 170102031304).

- There are no fish bearing streams within the treatment area.

- There are Class B-1 waters adjacent to the project area. Class B-1 Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality		**X**				**X**				**X**				
Water Quantity		**X**				**X**				**X**				
Action														
Water Quality		**X**				**X**				**X**			**Y**	**1,2**
Water Quantity		**x**				**X**				**X**			**Y**	**2,3**

Comments:

1. Water quality is impacted by road use and inadequate road drainage on portions of roads in the Potomac Valley and mixed uses of timber harvest, grazing and rural development.

2. The harvest would remove a very low volume per acre (~1,750 board feet per acre), and is not expected to have a measurable influence on: water quality, the amount or timing of runoff (water yield), or downslope stream stability from the proposed project area when compared to the effects anticipated under No Action. In summary, all BMP's, would be applied and administered during harvest operations. There would be low risk of disturbance or off-site erosion as a result of the use of existing roads for access and log hauling. Based on the harvest design, there is a low risk of direct, indirect or cumulative effects to water quality or downstream beneficial uses from the action alternative.

3. The removal of overstocked submerchantable trees has a low potential to increase runoff from decreased interception and transpiration; due to moderate precipitation and retaining well stocked and spaced conifers to maximize growth. Any potential change in water yield is expected to be minor and unlikely to be measurable or deliver off-site to surface waters.

Water Quality & Quantity Mitigations:

- No harvest activities proposed within SMZs.
- The Montana Administrative Rules for Forest Management; Watershed Management and watershed RMS would be implemented. BMP's and SMZ's would be implemented. Unit boundaries were all buffered to exclude the SMZ's.
- Thinning and harvest operations would be restricted to dry or frozen conditions to avoid road damage which could lead to increased runoff.
- The proposed haul route would use existing roads.
- Skid trails would be mitigated following harvesting and yarding operations with water bars or slash.

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Action														
Sediment		**X**			**X**				**X**				**y**	**1**
Flow Regimes	**X**				**X**				**X**					
Woody Debris	**X**				**X**				**X**					

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Stream Shading	X				X				X					
Stream Temperature	X				X				X					
Connectivity	X				X				X					
Populations	X				X				X					

Comments:
There are no fish bearing streams within the treatment area.

Fisheries Mitigations:
1. The Montana Administrative Rules for Forest Management; Watershed Management and watershed RMS would be implemented. BMP's would be implemented on all roads and within the unit. Slash from the lop-and-scatter thinning process would be left in the unit.

WILDLIFE:
Evaluation of the impacts of the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on Wildlife (including unique, endangered, fragile, or limited environmental resources).

Wildlife Existing Conditions: The project area is a mix of forested Douglas-fir, western larch, and ponderosa pine stands. Grizzly bears could occasionally use the vicinity of the project area. Potential habitat exists for flammulated owls and pileated woodpeckers in the project area. Gray wolves have been in the vicinity in the past and likely use the project area. No big game winter range exists in the project area but summer range for deer, elk, and moose exists in the project area. Big game security habitat does not exist solely within the project area, but portions of the project area could contribute to potential security habitats in the cumulative effects analysis area.

No-Action: No potential for disturbance to wildlife would be anticipated. No timber management activities would be conducted, thus no appreciable changes to existing habitats would occur. Continued maturation could slowly improve pileated woodpecker habitats and grizzly bear security habitats but could reduce habitat quality for flammulated owls and big game foraging habitats over the long term. Continued wildlife use at levels similar to present conditions would be anticipated. Generally, negligible direct, indirect, or cumulative effects would occur.

Action Alternative (see Wildlife table below):

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear *(Ursus arctos)* Habitat: Recovery areas, security from human activity		X				X				X			Y	1

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Canada lynx (*Felix lynx)* Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone	**X**				**X**				**X**					**2**
Yellow-Billed Cuckoo *(Coccyzus americanus)* Habitat: Deciduous forest stands of 25 acres or more with dense understories and in Montana these areas are generally found in large river bottoms	**X**				**X**				**X**					**2**
Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest less than 1 mile from open water	**X**				**X**				**X**					**2**
Black-backed woodpecker *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest	**X**				**X**				**X**					**2**
Coeur d'Alene salamander *(Plethodon idahoensis)* Habitat: Waterfall spray zones, talus near cascading streams	**X**				**X**				**X**					**2**
Columbian sharp-tailed grouse *(Tympanuchus Phasianellus columbianus)* Habitat: Grassland, shrubland, riparian, agriculture	**X**				**X**				**X**					**2**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Common loon *(Gavia immer)* Habitat: Cold mountain lakes, nest in emergent vegetation	**X**				**X**				**X**					**2**
Fisher *(Martes pennanti)* Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian	**X**				**X**				**X**					**2**
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and Douglas-fir forest		**X**				**X**				**X**			**Y**	**3**
Gray Wolf *(Canis lupus)* Habitat: Ample big game populations, security from human activities		**X**				**X**				**X**			**Y**	**4**
Harlequin duck *(Histrionicus histrionicus)* Habitat: White-water streams, boulder and cobble substrates	**X**				**X**				**X**					**2**
Northern bog lemming *(Synaptomys borealis)* Habitat: Sphagnum meadows, bogs, fens with thick moss mats	**X**				**X**				**X**					**2**
Mountain plover (*Charadrius montanus*) Habitat: short-grass prairie & prairie dog towns	**X**				**X**				**X**					**2**
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open	**X**				**X**				**X**					**2**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
foraging areas and/or wetlands														
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest		**X**				**X**				**X**			**Y**	**5**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**					**2**
Wolverine *(Gulo gulo)* Habitat: Alpine tundra and high-elevation boreal forests that maintain deep persistent snow into late spring	**X**				**X**				**X**					**2**
Big Game Species														
Elk		**X**				**X**				**X**			**Y**	**6**
Whitetail		**X**				**X**				**X**			**Y**	**6**
Mule Deer		**X**				**X**				**X**			**Y**	**6**
Bighorn Sheep	**X**				**X**				**X**					**2**
Other														

Comments:

1. The project area is 20 miles south of the Northern Continental Divide Ecosystem grizzly bear recovery area and is 5 miles southwest of `occupied' grizzly bear habitat as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones (Wittinger et al. 2002). Individual animals could occasionally use the project area while dispersing or possibly foraging, and they could be displaced by project-related disturbance if they are in the area during proposed activities. Negligible changes to grizzly bear habitats would occur. No changes to open road densities, security habitats, or human–related food, garbage, or other unnatural grizzly bear attractants would occur. However, given their large home range sizes, and manner in which they use a broad range of forested and non-forested habitats, the proposed activities and alterations of forest vegetation on the project area would have negligible influence on grizzly bears.

2. The project area is either out of the range of the normal distribution for this species or suitable habitat is not present. Thus, no direct, indirect, or cumulative effects would be anticipated.

3. Roughly 59 acres of flammulated owl habitats would be harvested and another 194 acres of flammulated owl habitats would be pre-commercially thinned, which would further open the canopy while favoring ponderosa pine, Douglas-fir, and western larch. The more open stand conditions, the retention of fire adapted tree species, and the maintenance of snags would move the proposed project area toward historical conditions, which is preferred flammulated owl habitat. Proposed activities could occur during the flammulated owl nesting season, which could introduce some disturbance of nesting owls, but activities would not affect nesting structures.

4. Gray wolves are in the vicinity and the project area is in the Chamberlain wolf pack home range; additionally, the suspected Union Peak wolf pack appears to be in the vicinity. Big game species exist in the area much of the year. No deer, elk, or moose winter range exists in the project area (see comment 8). Wolves using the area could be disturbed by proposed activities and are most sensitive at den and rendezvous sites, which are not known to occur in the project area or within 1 mile of the project area. Disturbance at potential den sites and rendezvous sites could exist if these features are in the vicinity and operations were conducted during the spring period. Should either a den or rendezvous site be identified within 1 mile of the project area, a DNRC biologist would be consulted to determine if additional mitigations would be necessary. In the short-term, the proposed activities could lead to slight shifts in big game use, which could lead to a shift in wolf use of the area. Proposed activities would alter canopy closure and summer big game habitats, which could alter some big game use of the area but would not be expected to appreciably alter wolf prey abundance.

5. Minor amounts of pileated woodpecker habitats (~27 acres) and potential foraging habitats (~15 acres) would receive treatments. Disturbance to pileated woodpeckers could occur if proposed activities occur during the nesting period. Harvesting would reduce forested habitats for pileated woodpeckers in the project area. Some potential continued use as foraging habitats would be possible depending on density of trees retained. No appreciable change to pileated woodpecker habitats would be anticipated given the nature of the proposed pre-commercial thinning activities; however increased growth rates could expedite the return of these stands into potential pileated woodpecker habitat. Elements of the forest structure important for nesting pileated woodpeckers, including snags, coarse woody debris, numerous leave trees, and snag recruits would be retained in the proposed harvest areas. Since pileated woodpecker density is positively correlated with the amount of dead and/or dying wood in a stand (McClelland 1979), pileated woodpecker densities in the project area would be expected to be reduced on 59 acres.

6. Big game species exist in the project area much of the year. No deer, elk, or moose winter range exists in the project area. Activities conducted during the non-winter periods could disturb big game from seasonal ranges, but other suitable habitats are more widely available during those non-winter time periods. Proposed activities would alter canopy closure and summer big game habitats, which could alter some big game use of the area. No big game security habitat exists in the project area due to the relatively small size of the project area, but habitats in the project area look to contribute to security habitats in the cumulative effects analysis area. No changes to status of existing roads or open road densities would occur, thus negligible changes to big game security habitat would occur.

Wildlife Mitigations:

- A DNRC biologist would be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.435) are needed.
- Motorized public access would be restricted at all times on restricted roads that are opened for harvesting activities; signs would be used during active periods and a physical closure (gate, barriers, equipment, etc.) would be used during inactive periods (nights, weekends, etc.). These roads and skid trails would be reclosed to reduce the potential for unauthorized motor vehicle use.
- Snags, snag recruits, and coarse woody debris would be managed according to *ARM 36.11.411* through *36.11.414*, particularly favoring western larch and ponderosa pine. Clumps of existing snags could be maintained where they exist to offset areas without sufficient snags. Coarse woody debris retention would emphasize retention of downed logs of 15-inch diameter or larger.
- Contractors and purchasers conducting contract operations would be prohibited from carrying firearms while on duty.
- Food, garbage, and other attractants would be stored in a bear-resistant manner.

AIR QUALITY:

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Smoke	**X**				**x**				**X**					
Dust	**x**				**X**				**X**					
Action														
Smoke		**x**			**X**				**x**				**y**	**1**
Dust		**X**			**x**				**X**				**y**	**2**

Comments:
Under the Action Alternative, slash piles consisting of tree limbs and tops and other vegetative debris would be created throughout the project area during harvesting. These slash piles would ultimately be burned after harvesting operations have been completed.

Dust may be produced along the haul route if wood is hauled during summer months.

Air Quality Mitigations:

- *Burning within the project area would be short in duration and would be conducted when conditions favored good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group.*

- *The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.*

- *Because of the small project area, hauling would be short in duration.*

- *The Forest Officer may impose speed restrictions to limit dust along the haul route behind the gate as needed.*

Will the No-Action or Action Alternatives result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Historical or Archaeological Sites	**X**				**X**				**x**					
Aesthetics		**X**			**X**				**X**					
Demands on Environmental Resources of Land, Water, or Energy	**X**				**x**				**X**					
Action														
Historical or Archaeological Sites	**X**				**X**				**X**					
Aesthetics		**X**			**X**					**X**			**Y**	**1**
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					

Comments:

1. Lop-and-scattered slash from hand thinned units is often noticeable for 1-2 years post-treatment.

Mitigations:.

- If a thinning unit is lop-and-scattered, slash will usually settle after 1-2 years of snowload. As the slash settles and decomposes it becomes less noticeable.

OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: *List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

- None

Impacts on the Human Population

Evaluation of the impacts on the proposed action including **direct, secondary, and cumulative** impacts on the Human Population.

Will the No-Action or Action Alternatives result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Health and Human Safety	**x**				**X**				**X**					
Industrial, Commercial and Agricultural Activities and Production	**x**				**X**				**X**					
Quantity and Distribution of Employment	**x**				**X**				**X**					
Local Tax Base and Tax Revenues	**X**				**X**				**X**					
Demand for Government Services	**X**				**X**				**X**					
Access To and Quality of Recreational and Wilderness Activities	**X**				**X**				**X**					
Density and Distribution of population and housing	**X**				**X**				**X**					
Social Structures and Mores	**X**				**X**				**X**					
Cultural Uniqueness and Diversity	**X**				**X**				**X**					
Action														
Health and Human Safety	**X**				**X**				**X**					
Industrial, Commercial and Agricultural Activities and Production	**x**				**X**				**X**					
Quantity and Distribution of Employment		**X**			**X**				**X**				**N/A**	**1**
Local Tax Base and Tax Revenues	**X**				**X**				**X**					
Demand for Government Services	**X**				**X**				**X**					
Access To and Quality of	**X**				**X**				**X**					

Will the No-Action or Action Alternatives result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Recreational and Wilderness Activities														
Density and Distribution of population and housing	**X**				**X**				**X**					
Social Structures and Mores	**X**				**X**				**X**					
Cultural Uniqueness and Diversity	**X**				**X**				**x**					

***Comments**:*
The project size is of a scale that would not have a large effect on local employment; however each unit may provide a private contractor with 1-3 months of employment for his/herself and his/her employees.

Mitigations:
N/A

Locally Adopted Environmental Plans and Goals: *List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.*
None

Other Appropriate Social and Economic Circumstances:

No Action: The No Action Alternative would generate no cost to the trust at this time, existing forest conditions would persist.

Action: The proposed pre-commercial thinning would initially create a cost to the trust; however, this would be ~~a~~an long-term investment in increased productivity for the stand. This increased productivity should result in increased volume, available at an earlier date than would be available without treatment.

Direct Costs associated with this project are estimated to be $48,500. This figure was determined by multiplying the estimated number of acres (194) by the estimated cost per acre ($250). These cost estimates were typical for previous projects similar to the proposed project.

Commercial harvest would generate approximately $10,500 for the Acquired Land-Public Schools Trust. An additional Forest Improvement Fee would be charged on a per ton basis for all sawlog loads.

References

DNRC 1996. State forest land management plan: final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.

DNRC. 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.

Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?
NO

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?
NO

Environmental Assessment Checklist Prepared By:

Name: Amy Helena
Title: Forest Management Supervisor
Date: 2/6/2019

Finding

Alternative Selected
The Action Alternative

Significance of Potential Impacts

A. The Action Alternative meets the specific Objectives of the Proposed Action as described on page 1 of the EA. The Action Alternative is likely to produce an economic return to the Acquired Lands Trust in the long run, while providing a mechanism whereby the existing timber stands would be moved towards conditions more like those which existed historically.

B. The analysis of identified issues did not disclose any reason compelling the DNRC to not implement this pre-commercial thinning project.

C. The Action Alternative includes mitigation activities to address environmental concerns identified during the project analysis.

Need for Further Environmental Analysis

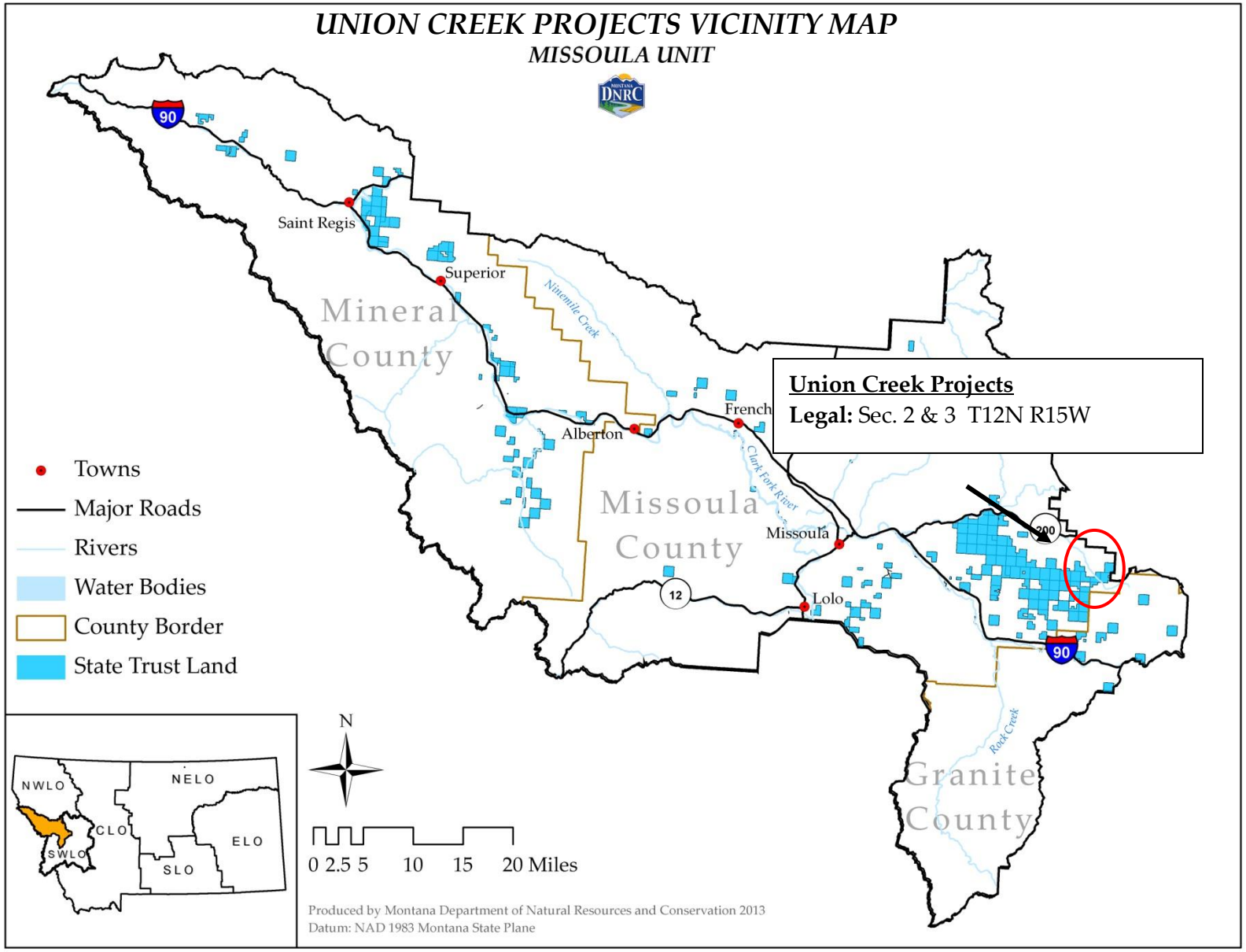
[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Jonathan Hansen
Title: Missoula Unit Manager
Date: 2/7/19
Signature: /s/ *Jonathan Hansen*

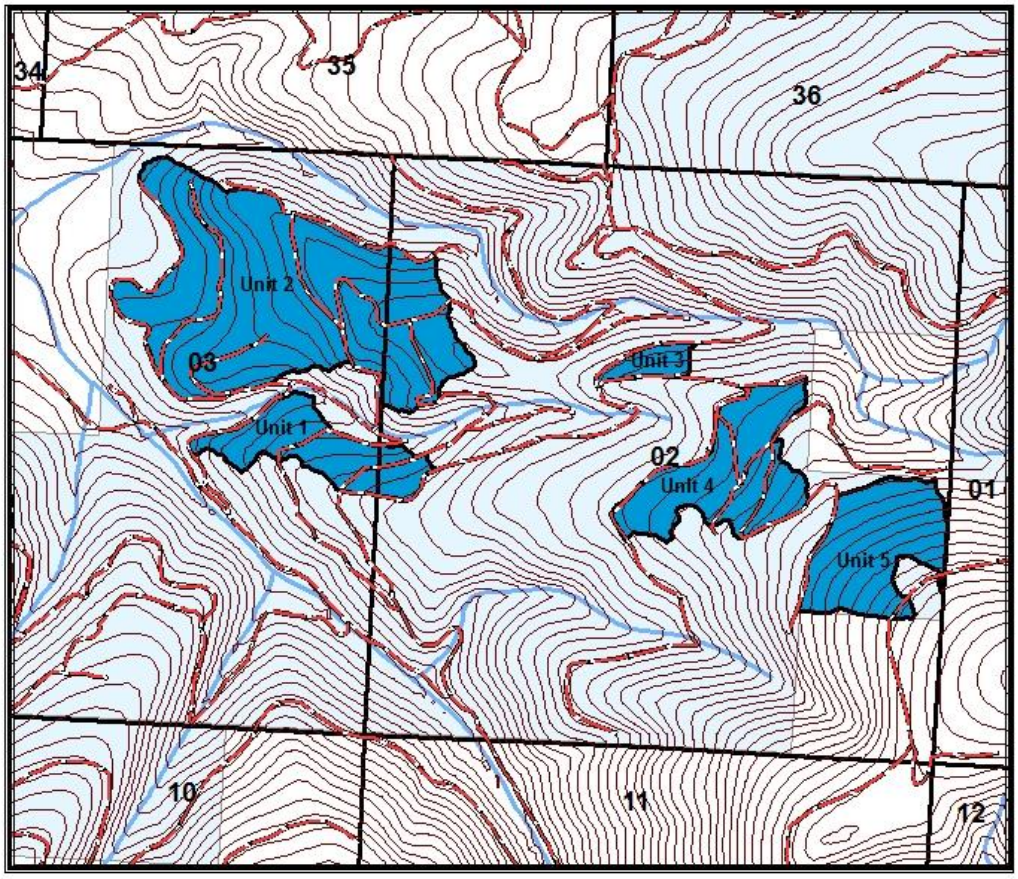
Attachment A- Maps

A-1: Timber Sale Vicinity Map



A-2: PCT Unit

Unibrow PCT
Sections 2 & 3 T12N R15W
Missoula Unit



Miles
0 0.175 0.35 0.7 1.05 1.4

Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects). No lazy straps, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF, LPP. Keep slash out of SMZ's.

Spacing requirements:
Unit 1 (22 acres): 14' X 14'
Unit 2 (105 acres): 14' X 14'
Unit 3 (5 acres): 14' X 14'
Unit 4 (33 acres): 14' X 14'
Unit 5 (29 acres): 14' X 14'

N
W E
S

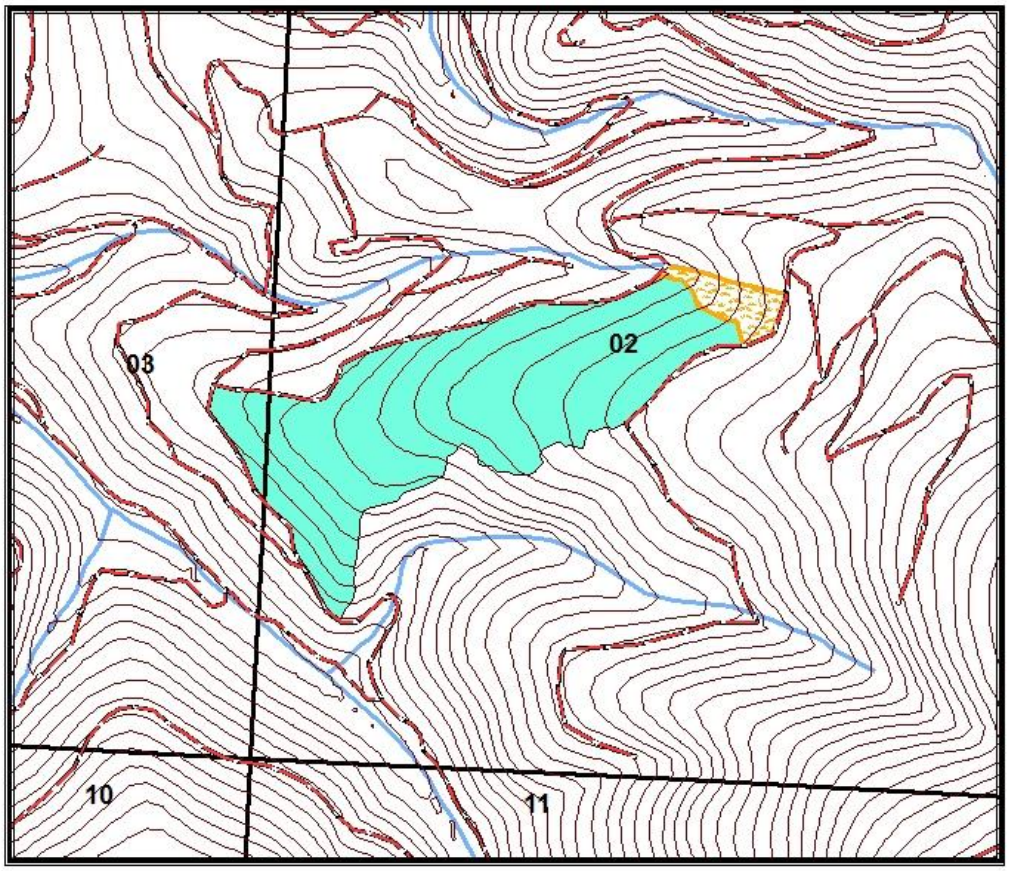
Roads
Unibrow PCT
Streams

Unit Boundary:Blue and PinkFlagging and Purple Three Stripe Paint

A. Helena
2/6/2019

A-3: Timber Permit

Union Suit
Sections 2 & 3 T12N R15W
Missoula Unit



0 0.1 0.2 0.4 0.6 0.8 Miles

Harvest Unit: Leave trees marked with a blue horizontal stripe or a blue "W" around the bole of the tree. Protect the residual stand and regeneration during all aspects of the harvest operations. Long butt in the woods and use existing skid trails and landings whenever possible.

Harvest Boundaries: Blue 3 stripe and blue flagging
Leave Trees: Blue horizontal stripe or blue "W" around the bole of the tree and orange stump mark.

Roads
SMZ
Union Suit
Streams

N
W E
S

A. Helena
2/6/2019